AMENDMENTS TO THE CLAIMS

1. (Original) A data communication system comprising: a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router,

the mobile router comprising:

a plurality of communication means of a communication service containing a same or different types of services;

a control table which stores an address assigned to the communication means and route information of the communication means, such that the address and the route information are associated with each other; and

transferring means which receives a packet from the mobile network node to the correspondent node, selects usable communication means based on the control table, and transfers the packet to the home agent; and

the home agent comprising:

means for identifying the address assigned to the usable communication means of the mobile router;

a control table which stores the address which is identified and route information of the address, such that the address and the route information are associated with each other; and

transferring means which receives a packet from the correspondent node to the mobile network node, selects an address based on the control table, and transfers the packet to the address; wherein

a logical line is configured by combining lines of the plurality of communication means, through which the mobile network node and the correspondent node communicate with each other.

2. (Original) A data communication system comprising: a home agent; and a mobile router,

the mobile router comprising:

a plurality of communication means of a communication service containing a same or different types of services;

a control table which stores an address assigned to the communication means and route information of the communication means, such that the address and the route information are associated with each other; and

transferring means which receives a packet, selects usable communication means based on the control table, and transfers the packet to the home agent; and

the home agent comprising:

means for identifying an address assigned to usable communication means of the mobile router;

a control table which stores the address which is identified and route information of the address, such that the address and the route information are associated with each other; and

3

transferring means which receives a packet, selects an address based on the control table, and transfers the packet to the address; wherein

a logical line is configured by combining lines of the plurality of communication means, through which the home agent and the mobile router communicate with each other.

3. (Original) A data communication system comprising: a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router,

the mobile router comprising:

a plurality of communication means which communicate with the home agent;

a control table which stores route information containing an address assigned to the plurality of communication means; and

means for receiving a packet from the mobile network node to the correspondent node, selecting at least one of the communication means based on the control table, and transferring the packet to the home agent; and

the home agent comprising:

means for identifying an address assigned to usable communication means of the mobile router;

a control table which stores route information containing the address which is identified; and

means for receiving a packet from the correspondent node addressed to the mobile network node, selecting at least one address based on the control table, and transferring the packet to the address; wherein

a logically multiplexed line is configured by combing the plurality of communication means between the mobile router and the home agent, through which the mobile network and the correspondent node communicate with each other.

4. (Currently Amended) The data communication system according to any one of claims 1 to 3claim 2, wherein

the mobile router comprises: means for detecting a change in connection status of the communication means currently-in-use; and means for notifying the home agent of the change in connection status and an address assigned to the communication means, and

the home agent comprises means for updating, based on the notification, information in a control table that manages an address of the communication means of the mobile router.

5. (Currently Amended) The data communication system according to any one of claims 1 to 4claim 2, wherein

the mobile router comprises means for notifying the home agent of an address of the communication means scheduled to be disconnected, before disconnecting a currently-connected line of the communication means, and

4

the home agent comprises means for deleting, based on the notification, information related to an address of the communication means which the home agent is notified of, from the control table.

6. (Currently Amended) The data communication system according to ~~any one of claims 1 to 5~~claim 2, wherein

the mobile router comprises: means for notifying the home agent of an address of the communication means predicted to be disconnected, when an event occurs where disconnection of a currently-connected line of the communication means is predictable, and

the home agent comprises means for updating, based on the notification, information in a control table that manages an address of the mobile router.

7. (Currently Amended) The data communication system according to ~~any one of claims 1 to 6~~claim 2, wherein

the mobile router comprises means for responding to a packet from the home agent; and

the home agent comprises: means for regularly transmitting a packet to a plurality of addresses the mobile router has; and means for determining an address as unusable if no response is made from the address to the packet, and updating information in a control table that manages an address of the mobile router.

8. (Currently Amended) The data communication system according to ~~any one of claims 1 to 7~~claim 2, wherein

the home agent comprises: means for estimating an address of usable communication means of the mobile router based on positional information of the mobile router,; and means for updating information in a control table that manages an address of the mobile router based on the estimation.

9. (Currently Amended) The data communication system according to ~~any one of claims 1 to 8~~claim 2, wherein the route information in the control table of the mobile router includes at least one of a type of communication means or line, a packet delay, a bandwidth of the line, or usage information.

10. (Currently Amended) The data communication system according to ~~any one of claims 1 to 9~~claim 2, wherein the route information in the control table of the mobile router includes at least one of a type of communication means or line, a packet delay, a bandwidth of the line, or a timing enabling transmission of the next packet.

11. (Currently Amended) The data communication system according to ~~any one of claims 1 to 10~~claim 2, wherein the transferring means of the home agent is means for selecting an address to which transmission is possible by calculating a transmission timing based on the route information in the control table, so as not to generate a packet loss.

5

12. (Currently Amended) The data communication system according to ~~any one of claims 1 to 11~~claim 2, wherein the home agent selects a transmission timing and a destination address using means which is different depending on a QoS class of a received packet.

13. (Currently Amended) The data communication system according to ~~any one of claims 1 to 12~~claim 2, wherein the mobile router selects communication means using means which is different depending on a QoS class of a received packet.

14. (Currently Amended) The data communication system according to ~~any one of claims 1 to 13~~claim 2, wherein the mobile router comprises: means for monitoring a traffic amount of a mobile network node thereunder; and means for connecting and disconnecting a channel to the outside based on the traffic amount.

15. (Currently Amended) The data communication system according to ~~any one of claims 1 to 14~~claim 2, wherein
     the mobile router comprises:
     a control table which manages policy information mapped to respective communication means; and
     transferring means, when transferring a packet to the home agent, which selects the communication means based on the policy information and transfers the packet, and
     the home agent comprises:
     a control table which manages policy information mapped to respective addresses of the mobile router; and transferring means, when transferring a packet to the mobile router, which selects an address of the mobile router based on the policy information and transfers the packet, wherein
     utilization of a plurality of communication means is determined between the home agent and the mobile router, based on the policy information.

16. (Original) The data communication system according to claim 15, wherein the policy information refers to information on a communication fee of individual communication means.

17. (Currently Amended) The data communication system according to claim 15 ~~or 16~~, wherein utilization of individual communication means is determined based on the policy information, such that a total of the communication fees is minimized.

18. (Currently Amended) The data communication system according to ~~any one of claims 15 to 17~~claim 15, wherein
when it is assumed that:
     the communication means adopts a measured-rate billing system;
     the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;
     the information on the communication fee is given such that:

the first communication means has a communication unit price of a1, and a bandwidth of B1;

the second communication means has a communication unit price of a2 (>a1), and a bandwidth of B2;

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C;

the data communication system:

finds the largest M which satisfies the inequality: C >= B1+B2+...+BM, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Mth communication means; and

uses C-B1-B2- ... -BM from of the bandwidth of the (M+1)th communication means, thereby

using a line such that a total of the communication fees is minimized.

19. (Currently Amended) The data communication system according to ~~any one of claims 16 to 18~~claim 16, which uses communication means adopting a flat-rate billing system in preference to communication means adopting a measured-rate billing system.

20. (Currently Amended) The data communication system according to ~~any one of claims 16 to 19~~claim 16, wherein

when it is assumed that:

the first to Mth communication means adopts a flat-rate billing system;

the Mth to Nth communication means adopts a measured-rate billing system;

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

a total bandwidth of the first to Mth communication means is B0,

the information on the communication fee is given such that:

the (M+1)th communication means has a communication unit price of a(M+1), and a bandwidth of B(M+1); and the (M+2)th communication means has a communication unit price of a(M+2) (>a(M+1)), and a bandwidth of B(M+2);

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the data communication system:

if C<=B0, uses one of the first to Mth communication means, and

if C>B0, finds the largest L which satisfies the inequality: C >= B0+B1+B2+...+BL, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Lth communication means; and

uses C-B1-B2- ... -BL of the bandwidth of the $(L+1)^{th}$ communication means, thereby

using a line such that a total of the communication fees is minimized.

21. (Currently Amended) The data communication system according to ~~any one of claims 16 to 20~~claim 16, wherein a communication fee is changed in accordance with a date and time, and utilization of individual communication means is changed in accordance with this change.

22. (Currently Amended) The data communication system according to ~~any one of claims 16 to 21~~claim 15, wherein the mobile router and the home agent change the policy information based on positional information of the mobile router.

23. (Currently Amended) The data communication system according to ~~any one of claims 16 to 21~~claim 16, wherein a communication fee is changed in accordance with a place, and utilization of individual communication means is changed in accordance with this change.

24. (Currently Amended) The data communication system according to ~~any one of claims 15 to 23~~claim 15, wherein the home agent comprises means for including the policy information in the response message when receiving notification of an address from the mobile router, and distributing the policy information to the mobile router.

25. (Currently Amended) The data communication system according to ~~any one of claims 1 to 24~~claim 2, wherein the mobile router comprises sequence control means which controls a sequence of a received packets.

26. (Currently Amended) The data communication system according to ~~any one of claims 1 to 25~~claim 2, characterized in that the home agent comprises sequence control means which controls a sequence of a received packets.

27. (Original) A mobile router in a data communication system configured by a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the mobile router comprising:

a plurality of communication means of a communication service containing a same or different types of services;

a control table which stores an address assigned to the communication means and route information of the communication means, such that the address and the route information are associated with each other; and

transferring means which receives a packet from the mobile network node to the correspondent node, selects usable communication means based on the control table, and transfers the packet to the home agent, and

transferring a packet addressed to the correspondent node from the mobile network node to the home agent though a line configured by combining lines of the plurality of communication means.

28. (Original) A mobile router in a data communication system configured by a home agent and a mobile router, the mobile router comprising:

a plurality of communication means of a communication service containing a same or different types of services;

a control table which stores an address assigned to the communication means and route information of the communication means, such that the address and the route information are associated with each other; and

transferring means which receives a packet, selects usable communication means based on the control table, and transfers the packet to the home agent; and

^{7} communicates with the home agent though a line which is configured by combining lines of the plurality of communication means.

29. (Original) A mobile router in a data communication system configured by a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the mobile router comprising:

a plurality of communication means which communicate with the home agent;

a control table which stores route information containing an address assigned to the plurality of communication means; and

means for receiving a packet from the mobile network node to the correspondent node, selecting at least one of the communication means based on the control table, and transferring the packet to the home agent; and

transferring a packet addressed to the correspondent node from the mobile network node to the home agent though a logically multiplexed line which is configured by combing the plurality of communication means.

30. (Currently Amended) The mobile router according to ~~any one of claims 27 to 29~~claim 28, further comprising:

means for detecting a change in connection status of the communication means currently-in-use; and

means for notifying the home agent of the change in connection status and an address assigned to the communication means.

31. (Currently Amended) The mobile router according to ~~any one of claims 27 to 30~~claim 28, further comprising:

means for notifying the home agent of an address of the communication means scheduled to be disconnected, before disconnecting a currently-connected line of the communication means.

32. (Currently Amended) The mobile router according to ~~any one of claims 27 to 31~~claim 28, comprising means for notifying the home agent of an address of the communication means predicted to be disconnected, when an event occurs where disconnection of a currently-connected line of the communication means is predictable.

33. (Currently Amended) The mobile router according to ~~any one of claims 27 to 32~~claim 28, comprising means for responding to a packet from the home agent for investigating a usable address.

34. (Currently Amended) The mobile router according to ~~any one of claims 27 to 33~~claim 28, wherein the route information in the control table of the mobile router includes at least one of a type of communication means or line, a packet delay, a bandwidth of the line, or usage information.

35. (Currently Amended) The mobile router according to ~~any one of claims 27 to 34~~claim 28, which selects communication means using means which is different depending on a QoS class of a received packet.

36. (Currently Amended) The mobile router according to ~~any one of claims 27 to 35~~claim 28, comprising: means for monitoring a traffic amount of a mobile network node thereunder; and means for connecting and disconnecting a channel to the outside based on the traffic amount.

37. (Currently Amended) The mobile router according to ~~any one of claims 27 to 36~~claim 28,
     which comprises:
     a control table which manages policy information mapped to respective communication means; and
     transferring means, when transferring a packet to the home agent, which selects the communication means based on the policy information and transfers the packet, and
     which determines utilization of a plurality of communication means based on the policy information.

38. (Original) The mobile router according to claim 37, wherein the policy information refers to information on a communication fee of individual communication means.

39. (Currently Amended) The mobile router according to claim 37 ~~or 38~~, wherein the transferring means determines utilization of individual communication means based on the policy information, such that a total of the communication fees is minimized.

40. (Currently Amended) The mobile router according to ~~any one of claims 37 to 39~~claim 37, wherein
when it is assumed that:
     the communication means adopts a measured-rate billing system;

10

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

the information on the communication fee is given such that:

the first communication means has a communication unit price of a1, and a bandwidth of B1;

the second communication means has a communication unit price of a2 (>a1), and a bandwidth of B2;

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the mobile router:

finds the largest M which satisfies the inequality: C >= B1+B2+...+BM, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Mth communication means; and

uses C-B1-B2- ... -BM of the bandwidth of the $(M+1)^{th}$ communication means, thereby

using a line such that a total of the communication fees is minimized.

41. (Currently Amended) The mobile router according to ~~any one of claims 38 to 40~~claim 38, which uses communication means adopting a flat-rate billing system in preference to communication means adopting a measured-rate billing system.

42. (Currently Amended) The mobile router according to ~~any one of claims 37 to 41~~claim 38, wherein

when it is assumed that:

the first to M^{th} communication means adopts a flat-rate billing system;

the Mth to N^{th} communication means adopts a measured-rate billing system;

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

a total bandwidth of the first to M^{th} communication means is B0,

the information on the communication fee is given such that:

the $(M+1)^{th}$ communication means has a communication unit price of a(M+1), and a bandwidth of B(M+1); and the $(M+2)^{th}$ communication means has a communication unit price of a(M+2) (>a(M+1)), and a bandwidth of B(M+2);

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the mobile router:

if C<=B0, uses one of the first to Mth communication means, and

11

if C>B0, finds the largest L which satisfies the inequality: C >= B0+B1+B2+...+BL, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Lth communication means; and

uses C-B1-B2- ... -BL of the bandwidth of the $(L+1)^{th}$ communication means, thereby

using a line such that a total of the communication fees is minimized.

43. (Currently Amended) The mobile router according to ~~any one of claims 37 to 42~~claim 38, wherein a communication fee is changed in accordance with a date and time, and utilization of individual communication means is changed in accordance with this change.

44. (Currently Amended) The mobile router according to ~~any one of claims 37 to 43~~claim 37, which changes the policy information based on positional information of the mobile router.

45. (Currently Amended) The mobile router according to ~~any one of claims 37 to 44~~claim 38, wherein a communication fee is changed in accordance with a place, and utilization of individual communication means is changed in accordance with this change.

46. (Currently Amended) The mobile router according to ~~any one of claims 27 to 45~~claim 28, characterized by comprising sequence control means which controls a sequence of a received packets.

47. (Original) A home agent in a data communication system configured by a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the home agent comprising:

means for identifying an address assigned to usable communication means among communication means of a communication service containing the same or different types of services of the mobile router;

a control table which stores the identified address and route information of the address, such that the address and the route information are associated with each other; and

transferring means which receives a packet addressed to the mobile network node from the correspondent node, selects the address based on the control table, and transfers the packet to the address; and

transferring a packet addressed to the mobile network node from the correspondent node to the mobile router though a line configured by a combining lines of the plurality of communication means.

48. (Original) A home agent in a data communication system configured by a home agent and a mobile router,

which comprises:

12

means for identifying an address assigned to usable communication means among communication means of a communication service containing the same or different types of services of the mobile router;

a control table which stores the identified address and route information of the adders, such that the address and the route information are associated with each other; and

means which receives a packet, selects an address based on the control table, and transfers the packet to the address; and

which communicates with the mobile router though a logical line configured by combining lines of the plurality of communication means.

49. (Original) A home agent in a data communication system configured by a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the home agent

comprising:

means for identifying an address assigned to usable communication means of the mobile router;

a control table which stores route information containing the identified address; and

means for receiving a packet addressed to the mobile network node from the correspondent node, selecting at least one of the addresses of the mobile router based on the control table, and transferring the packet to the address; and

communicating with the mobile router though a logically multiplexed line configured by combing the plurality of communication means.

50. (Currently Amended) The home agent according to ~~any one of claims 47 to 49~~claim 48, comprising means for updating the information of the control table that manages an address of the communication means of the mobile router, based on a change in connection status with the mobile router and notification of the address assigned to the communication means.

51. (Currently Amended) The home agent according to ~~any one of claims 47 to 50~~claim 48, comprising means for deleting from the control table, information related to an address of the communication means which the home agent is notified of, based on notification of an address of the communication means scheduled to be disconnected from the mobile connector.

52. (Currently Amended) The home agent according to ~~any one of claims 47 to 51~~claim 48, comprising means for updating information in a control table that manages an address of the mobile router, based on notification of an address of the communication means predicted to be disconnected from the mobile router.

53. (Currently Amended) The home agent according to ~~any one of claims 47 to 52~~claim 48, comprising:

means for regularly transmitting a packet to a plurality of addresses the mobile router has; and

means for determining an address as unusable if no response is made to the packet from the address, and updating information in a control table that manages an address of the mobile router.

54. (Currently Amended) The home agent according to ~~any one of claims 47 to 53~~claim 48, comprising:

means for estimating an address of usable communication means of the mobile router based on positional information of the mobile router; and

means for updating information in a control table that manages an address of the mobile router, based on the estimation.

55. (Currently Amended) The home agent according to ~~any one of claims 47 to 54~~claim 48, wherein the route information in the control table of the home agent includes at least one of a type of communication means or line, a packet delay, a bandwidth of the line, or a timing enabling transmission of the next packet.

56. (Currently Amended) The home agent according to ~~any one of claims 47 to 55~~claim 48, wherein the transferring means of the home agent is means for selecting an address to which transmission is possible by calculating a transmission timing based on the route information in the control table, so as not to generate a packet loss.

57. (Currently Amended) The home agent according to ~~any one of claims 47 to 56~~claim 48, which selects a transmission timing and a destination address using means which is different depending on a QoS class of a received packet.

58. (Currently Amended) The home agent according to ~~any one of claims 47 to 57~~claim 48,

which comprises: a control table which manages policy information mapped to respective addresses of the mobile router; and transferring means, when transferring a packet to the mobile router, which selects an address of the mobile router based on the policy information and transfers the packet, and

which determines utilization of a plurality of communication means based on the policy information between the home agent and the mobile router.

59. (Original) The home agent according to claim 58, wherein the policy information refers to information on a communication fee of individual communication means.

60. (Currently Amended) The home agent according to claim 58~~or 59~~, wherein the transferring means determines utilization of individual communication means based on the policy information, such that a total of the communication fees is minimized.

14

61. (Currently Amended) The home agent according to ~~any one of claims 58 to 60~~claim 58, wherein
when it is assumed that:

the communication means adopts a measured-rate billing system;

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

the information on the communication fee is given such that:

the first communication means has a communication unit price of a1, and a bandwidth of B1;

the second communication means has a communication unit price of a2 (>a1), and a bandwidth of B2;

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the home agent:

finds the largest M which satisfies the inequality: C >= B1+B2+...+BM, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Mth communication means; and

uses C-B1-B2- ... -BM of the bandwidth of the $(M+1)^{th}$ communication means, thereby

using a line such that a total of the communication fees is minimized.

62. (Currently Amended) The home agent according to ~~any one of claims 58 to 60~~claim 59, which uses communication means adopting a flat-rate billing system in preference to communication means adopting a measured-rate billing system.

63. (Currently Amended) The home agent according to ~~any one of claims 58 to 62~~claim 59, wherein
when it is assumed that:

the first to M^{th} communication means adopts a flat-rate billing system;

the Mth to N^{th} communication means adopts a measured-rate billing system;

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

a total bandwidth of the first to M^{th} communication means is B0,

the information on the communication fee is given such that:

the $(M+1)^{th}$ communication means has a communication unit price of a(M+1) and a bandwidth of B(M+1); and the (M+2)th communication means has a communication unit price of a(M+2) (>a(M+1)) and a bandwidth of B(M+2);

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the data communication system:

if C<=B0, uses one of the first to Mth communication means, and

if C>B0, finds the largest L which satisfies the inequality: C >= B0+B1+B2+...+BL, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Lth communication means; and

uses C-B1-B2- ... -BL of the bandwidth of the (L+1)th communication means, thereby

using a line such that a total of the communication fees is minimized.

64. (Currently Amended) The home agent according to ~~any one of claims 58 to 63~~claim 59, wherein a communication fee is changed in accordance with a date and time, and utilization of individual communication means is changed in accordance with this change.

65. (Currently Amended) The home agent according to ~~any one of claims 58 to 64~~claim 58, which changes the policy information based on positional information of the mobile router.

66. (Currently Amended) The home agent according to ~~any one of claims 58 to 65~~claim 59, wherein a communication fee is changed in accordance with a place, and utilization of individual communication means is changed in accordance with this change.

67. (Currently Amended) The home agent according to ~~any one of claims 58 to 66~~claim 58, comprising means for including the policy information in the response message when receiving notification of an address from the mobile router, and distributing the policy information to the mobile router.

68. (Currently Amended) The home agent according to ~~any one of claims 47 to 67~~claim 48, comprising sequence control means which controls a sequence of a received packets.

69. (Original) A program of a mobile router in a data communication system configured by: a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the program

causing the mobile router:

to function as a plurality of communication means of a communication service containing a same or different types of services;

to function as transferring means which receives a packet from the mobile network node to the correspondent node, selects usable communication means based on the control table which stores an address assigned to the communication means and route information of the communication means, such that the address and the route information are associated with each other, and transfers the packet to the home agent; and

16

configuring a logical line by combining lines of the plurality of communication means and transfers a packet addressed to the correspondent node from the mobile network node to the home agent.

70. (Original) A program of a mobile router in a data communication system configured by a home agent and a mobile router; the program
    causing the mobile router
    to function as a plurality of communication means of a communication service containing a same or different types of services;
    to function as transferring means which receives a packet, selects usable communication means based on the control table which stores an address assigned to the communication means and route information of the communication means, such that the address and the route information are associated with each other, and transfers the packet to the home agent; and
    configuring a logical line by combining lines of the plurality of communication means, and communicates with the home agent through this line.

71. (Original) A program of a mobile router in a data communication system configured by: a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the program
    causing the mobile router
    to function as a plurality of communication means to communicate with the home agent;
    to function as a control table which stores route information assigned to the plurality of communication means; and
    to function as means which receives a packet from the mobile network node to the correspondent node, selects at least one of the communication means based on the control table, and transfers the packet to the home agent; and
    configuring a logically multiplexed line by combining lines of the plurality of communication means, and to transfers a packet addressed to the correspondent node from the mobile network node to the home agent through this logically multiplexed line.

72. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 71~~claim 70, which causes the mobile router to
    function as means for detecting a change in connection status of the communication means currently-in-use; and
    function as means for notifying the home agent of the change in connection status and an address assigned to the communication means.

73. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 72~~claim 70, which causes the mobile router to function as means for notifying the home agent of an address of the communication means scheduled to be disconnected, before disconnecting a currently-connected line of the communication means.

17

74. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 73~~claim 70, which causes the mobile router to function as means for notifying the home agent of an address of the communication means predicted to be disconnected, when an event occurs where disconnection of a currently-connected line of the communication means is predictable.

75. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 73~~claim 70, which causes the mobile router to function as means for responding to a packet from the home agent for investigating a usable address.

76. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 75~~claim 70, wherein the route information in the control table of the mobile router includes at least one of a type of communication means or line, a packet delay, a bandwidth of the line, or usage information.

77. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 76~~claim 70, which selects communication means using means which is different depending on a QoS class of a received packet.

78. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 77~~claim 70, which causes the mobile router to
        function as means for monitoring a traffic amount of a mobile network node thereunder; and
        function as means for connecting and disconnecting a channel to the outside based on the traffic amount.

79. (Currently Amended) The program of the mobile router according to ~~any one of claims 69 to 77~~claim 70, which
        causes the mobile router to function as transferring means, when transferring a packet to the home agent, which selects the communication means based on the policy information mapped to respective communication means; and
        determines utilization of a plurality of communication means based on the policy information.

80. (Original) The program of the mobile router according to claim 79, wherein the policy information refers to information on a communication fee of individual communication means.

81. (Currently Amended) The program of the mobile router according to claim 79~~or 80~~, wherein the transferring means determines utilization of individual communication means based on the policy information, such that a total of the communication fees is minimized.

82. (Currently Amended) The program of the mobile router according to ~~any one of claims 79 to 81~~claim 80, wherein
when it is assumed that:

the communication means adopts a measured-rate billing system;

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

the information on the communication fee is given such that:

the first communication means has a communication unit price of $a1$, and a bandwidth of $B1$;

the second communication means has a communication unit price of $a2$ ($>a1$), and a bandwidth of $B2$;

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN ($>a(N-1)$) and a bandwidth of BN, and

a bandwidth required for current communication is C,
the program:

finds the largest M which satisfies the inequality: $C >= B1+B2+...+BM$, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Mth communication means; and

uses $C-B1-B2-...-BM$ of the bandwidth of the $(M+1)^{th}$ communication means, thereby

using a line such that a total of the communication fees is minimized.

83. (Currently Amended) The program of the mobile router according to ~~any one of claims 79 to 82~~claim 80, which uses communication means adopting a flat-rate billing system in preference to communication means adopting a measured-rate billing system.

84. (Currently Amended) The program of the mobile router according to ~~any one of claims 79 to 82~~claim 80, wherein
when it is assumed that:

the first to M^{th} communication means adopts a flat-rate billing system;

the Mth to N^{th} communication means adopts a measured-rate billing system;

the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;

a total bandwidth of the first to M^{th} communication means is B0,

the information on the communication fee is given such that:

the $(M+1)^{th}$ communication means has a communication unit price of $a(M+1)$, and a bandwidth of $B(M+1)$; and the $(M+2)^{th}$ communication means has a communication unit price of $a(M+2)$ ($>a(M+1)$), and a bandwidth of $B(M+2)$;

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN ($>a(N-1)$) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the program:

if $C<=B0$, uses one of the first to M^{th} communication means, and

if $C>B0$, finds the largest L which satisfies the inequality: $C >= B0+B1+B2+...+BL$, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Lth communication means; and

uses $C-B1-B2-...-BL$ of the bandwidth of the $(L+1)^{th}$ communication means, thereby

using a line such that a total of the communication fees is minimized.

85. (Currently Amended) The program of the mobile router according to ~~any one of claims 79 to 84~~claim 80, wherein a communication fee is changed in accordance with a date and time, and utilization of individual communication means is changed in accordance with this change.

86. (Currently Amended) The program of the mobile router according to ~~any one of claims 79 to 85~~claim 79, which changes the policy information based on positional information of the mobile router.

87. (Currently Amended) The program of the mobile router according to ~~any one of claims 79 to 86~~claim 80, wherein a communication fee is changed in accordance with a place, and utilization of individual communication means is changed in accordance with this change.

88. (Currently Amended) The program of the mobile router according to ~~any one of claims 70 to 87~~claim 70, which causes the mobile router to function as sequence control means which controls a sequence of a received packets.

89. (Original) A program of a home agent in a data communication system configured by: a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the program

causing the home agent

to function as means for identifying an address assigned to the communication means which is usable among the communication means of a communication service containing a same or different types of services; and

to function as transferring means which receives a packet from the correspondent node to the mobile network node, selects an address based on the control table which stores the identified address and route information of the address, such that the address and the route information are associated with each other, and transfers the packet to the address; thereby

configuring a logical line by combining lines of the plurality of communication means, and transferring a packet from the correspondent node addressed to the mobile network node through this line to the mobile router.

20

90. (Original) A program of a home agent in a data communication system configured by a home agent and a mobile router; the program
   causing the home agent
   to function as means for identifying an address assigned to the communication means which is usable among the communication means of a communication service containing a same or different types of services; and
   to function as transferring means which receives a packet, selects an address based on the control table which stores the identified address and route information of the address, such that the address and the route information are associated with each other, and transfers the packet to the address; thereby
   configuring a logical line by combining lines of the plurality of communication means, and communicating with the mobile router through this line.

91. (Original) A program of a home agent in a data communication system configured by: a home agent; a correspondent node capable of communicating with the home agent; a mobile router; and a mobile network node capable of communicating with the mobile router, the program
   causing the home agent:
   to function as means for identifying an address assigned to the usable communication means of the mobile router;
   to function as a control table which stores route information containing the identified address; and
   to function as means which receives a packet from the correspondent node to the mobile network node, selects at least one of the addresses of the mobile router based on the control table, and transfers the packet to the address; thereby
   communicating with the mobile router through a logically multiplexed line configured by combining lines of the plurality of communication means.

92. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 91~~claim 90, characterized by causing the home agent to function as updating information in a control table that manages an address of the communication means of the mobile router, based on notification of a change in connection status and an address assigned to the communication means.

93. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 92~~claim 90, which causes the home agent to function as means for deleting from the control table, information related to the address of the communication means which the home agent is notified of, based on the notification of an address scheduled to be disconnected from the mobile router.

94. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 93~~claim 90, which causes the home agent to function as means for updating information

in a control table that manages an address of the mobile router, based on notification of an address of the communication means predicted to be disconnected from the mobile router.

95. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 94~~claim 90, which causes the home agent to

       function as means for regularly transmitting a packet to a plurality of addresses the mobile router has; and

       function as means for determining an address as unusable if no response is made to the packet from the address, and updating information in a control table that manages an address of the mobile router.

96. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 95~~claim 90, which causes the home agent

       to function as means for estimating, based on positional information of the mobile router, an address of usable communication means of the mobile router; and

       to function as means for updating, based on the estimation, information in a control table that manages an address of the mobile router.

97. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 96~~claim 90, wherein the route information in the control table of the home agent includes at least one of a type of communication means or line, a packet delay, a bandwidth of the line, or a timing enabling transmission of the next packet.

98. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 97~~claim 90, wherein the transferring means of the home agent is means for selecting an address to which transmission is possible by calculating a transmission timing based on the route information in the control table, so as not to generate a packet loss.

99. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 98~~claim 90, which selects a transmission timing and a destination address using means which is different depending on a QoS class of a received packet.

100. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 98~~claim 90, which

       causes the home agent to function as transferring means, when transferring a packet to the mobile router, which selects the address of the mobile router based on the policy information mapped to respective addresses of the mobile router, and transfers the packet, and

       determines utilization of a plurality of communication means with the mobile router based on the policy information.

101. (Original) The program of a home agent according to claim 100, wherein the policy information refers to information on a communication fee of individual communication means.

22

102. (Currently Amended) The program of a home agent according to claim 100 or 101, wherein the transferring means determines utilization of individual communication means based on the policy information, such that a total of the communication fees is minimized.

103. (Currently Amended) The program of a home agent according to any one of claims 100 to 102 claim 101, wherein
when it is assumed that:
        the communication means adopts a measured-rate billing system;
        the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;
        the information on the communication fee is given such that:
        the first communication means has a communication unit price of a1, and a bandwidth of B1;
        the second communication means has a communication unit price of a2 (>a1), and a bandwidth of B2;
        as repeated in the same manner hereafter,
        the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and
        a bandwidth required for current communication is C,
the program:
        finds the largest M which satisfies the inequality: C >= B1+B2+...+BM, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;
        uses all the bandwidths of the first to the Mth communication means; and
        uses C-B1-B2- ... -BM of the bandwidth of the $(M+1)^{th}$ communication means, thereby
        using a line such that a total of the communication fees is minimized.

104. (Currently Amended) The program of a home agent according to any one of claims 100 to 103 claim 101, which uses communication means adopting a flat-rate billing system in preference to communication means adopting a measured-rate billing system.

105. (Currently Amended) The program of a home agent according to any one of claims 100 to 104 claim 101, wherein
when it is assumed that:
        the first to M^{th} communication means adopts a flat-rate billing system;
        the Mth to N^{th} communication means adopts a measured-rate billing system;
        the data communication system comprises "N" units of communication means, that is, the first to the Nth communication means;
        a total bandwidth of the first to M^{th} communication means is B0,
        the information on the communication fee is given such that:

the (M+1)th communication means has a communication unit price of a(M+1), and a bandwidth of B(M+1); and the (M+2)th communication means has a communication unit price of a(M+2) (>a(M+1)), and a bandwidth of B(M+2);

as repeated in the same manner hereafter,

the Nth communication means has a communication unit price of aN (>a(N-1)) and a bandwidth of BN, and

a bandwidth required for current communication is C,

the data communication system:

if C<=B0, uses one of the first to Mth communication means, and

if C>B0, finds the largest L which satisfies the inequality: C >= B0+B1+B2+...+BL, when the bandwidths of the communication means are sequentially added starting from that of the first communication means;

uses all the bandwidths of the first to the Lth communication means; and

uses C-B1-B2- ... -BL of the bandwidth of the (L+1)th communication means, thereby

using a line such that a total of the communication fees is minimized.

106. (Currently Amended) The program of a home agent according to ~~any one of claims 100 to 105~~claim 101, wherein a communication fee is changed in accordance with a date and time, and utilization of individual communication means is changed in accordance with this change.

107. (Currently Amended) The program of a home agent according to ~~any one of claims 100 to 106~~claim 100, which changes the policy information based on positional information of the mobile router.

108. (Currently Amended) The program of a home agent according to ~~any one of claims 100 to 107~~claim 101, wherein a communication fee is changed in accordance with a place, and utilization of individual communication means is changed in accordance with this change.

109. (Currently Amended) The program of a home agent according to ~~any one of claims 100 to 107~~claim 100, which causes the home agent to function as means for including the policy information in the response message when receiving notification of an address from the mobile router, and distributing the policy information to the mobile router.

110. (Currently Amended) The program of a home agent according to ~~any one of claims 89 to 109~~claim 90, which causes the home agent to have sequence control means which controls a sequence of a received packets.